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Zhodnocení vývoje dluhopisového trhu v Číně

Evaluation of the China's Bond Market Development

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"Herewith I declare that I elaborated the entire thesis, including all annexes, independently."

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Content

1 Introduction

As an integral part of financial market, the bond market plays an increasingly important role in the Chinese economic development. Although it is relatively a young and emerging market, after more than 60 years of tortuous development, China's bond market has entered a "golden time" of development now, attracting worldwide attention. The main objective of this thesis is to evaluate the present situations of the China's bond market development and its future trends, through describing and analyzing the history, market structure, market size, innovations and development of China's bond market, to help the people have a better understanding of the Chinese bond market.

The thesis is divided into five chapters. The first chapter is the introduction which introduces the main goal of this thesis and research directions of this topic.

In the second chapter, we narrate the main characteristics of bond market in terms of the definition and classification, function, trading mechanism and regulatory system of the bond market.

In the third chapter, we focus on the overview of China's bond market. The development process, the market structure, regulatory system and trading mechanism of the Chinese bond market are stated.

The fourth chapter is focused on the assessment of China's bond market development. The overall market size, recent years' innovations and development trends are analyzed and evaluated from the perspective of the total issuance and outstanding amount, trading activity, the market system improvement, the investor structure optimization, the asset securitization development and the internationalization of China's bond market.

The last chapter is the conclusion, a summary of knowledge and conclusions implied by this thesis. After more than sixty years of development, the Chinese bond market has made great progress. The overall market size has expanded rapidly over recent years. The Chinese bond market currently is the world's third largest bond market only after the U.S. and Japan. Of course, China's bond market remains a developing market with various problems to be solved, but it is full of vitality and with the further development of the Chinese economy, would have broad prospects.

2 Main Characteristics of the Bond Market

In this chapter, we focus on main characteristics of the bond market. we know the bond market is an important part of financial market. Based on the trading term, the financial market is divided into two segments: the money market and the capital market. The capital market covers the stock market and the bond market. The bond market is especially important to economic activity because it enables corporations and governments to borrow to finance their activities and because it is where interest rates are determined. The bond market instruments include national debt securities, corporate bonds, municipal bonds and so on (Mishkin, 2010).

2.1 Definition and Classification of Bond Market

The bond market is a financial market where participants can issue new debt and trade debt securities. Bodie (2011) states that the bond market is composed of longer term borrowing or debt instruments than those that trade in the money market. It’s an indispensable part of a country’s financial system. Its primary goal is to provide long-term funding for public and private expenditures. A unified and mature bond market can provide low risk investment and financing tools for investors and fund-raisers of the whole society. A unified, mature bond markets constitute the basis for a country's financial markets.

There is no uniform system for classifying the sectors of bond markets. According to different criteria of classification, the bond market can be divided into different parts. Here are several common methods of classification.

Based on the operation process of bonds and the basic function of market, the bond market can be classified into the primary market and the secondary market. The primary market is where it’s the first time that issuers have sold new bonds. Through issuing new bonds in the primary market, governments, corporations, and financial institutions can raise funds from investors. The secondary market refers to the market in which investors buy or sell the existing bonds. The bond trading in the primary market exists between issuers and investors, while the transaction in the secondary market exist among investors (Fabozzi, 2014).

In accordance with the market organization form, the secondary market can be further divided into trading on an exchange and trading over the counter. Trading on an exchange here means debt securities are sold and bought on a stock exchange, such as London Stock Exchange, New York Stock Exchange, Luxembourg Stock Exchange and China's Shanghai Stock Exchange and Shenzhen Stock Exchange. As an organizer of bonds trading, a stock exchange doesn't take part in the bonds trading and the price decision-making, and just creates conditions and provides services for sellers and buyers. The over-the-counter market is an off-exchange place where participants sell or buy debt securities. A lot of securities institutions provide a special counter for bond trading. In the over-the-counter market, the securities institutions not only are the organizers of bond trading, but also the participants of bond trading. In addition, the over-the-counter market covers the interbank market and the trading market formed by investors through telephone and computer network (Mishkin, 2010).

Based on the issuers of bonds, the bond market is roughly divided into three types: government bond market (public debt market), corporate bond market and municipal bond market. They are described in more detail in the next part of this chapter.

2.1.1 Government Bond Market

Government debt, also known as national debt, is the debt owned by the central government. National debt securities are issued by the central government in order to raise fiscal funds. When the government issues the debt securities, the maturity, the principal, the interest rate and the schedule for making the interest payments and principal repayment are stated. National debt securities are backed by the full faith and credit of the central government. Generally, market participants view national debt securities as the ones with no credit risk (Bodie, 2011).

The government bond market is an important part of the bond market because of its size and liquidity. Government bonds are often used to be compared with other bonds to measure credit risk. Because of the inverse relationship between bond valuation and interest rates, the bond market is often used to indicate changes in interest rates or the shape of the yield curve.

2.1.2 Corporate Bond Market

Corporate bonds are debts issued by industrial, financial and service companies to finance capital investment and operating cash flow. Corporate bonds are a major source of capital for a company to expand its businesses. Investors in corporate bonds have a wide range of choices when it comes to bond structures, coupon rates, maturity dates, credit quality and industry exposure. The higher a company's perceived credit quality, the easier it becomes to issue debt securities at low rates and issue larger amounts of debt. Corporate bonds are considered to have higher risk than government bonds. As a result, interest rates are almost always higher, even for top-flight credit quality companies (Fabozzi, 2014).

Corporate bond market is where corporate bonds are issued and traded and provides investors with a fixed-income investment tool. This investment tool's credit rating is lower than nation debt securities and banking savings and its risk level is relatively high, but it offers a slightly higher yield to satisfy the requirements of the investors who have moderate risk tolerance. Moreover, as the fixed-income securities, the corporate bonds are an indispensable investment instrument for investors' portfolios, assisting investors in avoiding some investment risks.

For a company, bank credit, bond financing and equity financing are three main sources of financing. The disadvantage of bank credit is that the term of borrowing money is comparatively short and that the financing scale is limited. Equity financing may decentralize the control over the company due to issuance of new shares. Issuance of corporate bonds can not only provide a company with a larger amount of money, which can be used for a longer period, but also can prevent the controlling power of corporation from being decentralized.

2.1.3 Municipal Bond Market

Municipal bonds are debt securities issued by state and local governments and the entities that they establish. The two basic types of municipal security structures are tax-backed debt and revenue debt (Fabozzi, 2012). Tax-backed debt obligations are issued by states/provinces, counties, special districts, cities, towns and school districts that are secured by some form of tax revenue. Revenue bonds are issued to finance the expenditures such as the construction of highways, bridges, airports, water facilities, sewers, regional power grid, or building hospitals and universities, etc. Revenue bonds are secured by the revenues generated by the completed projects themselves or general public-purpose financings in which the issuers pledge to the bondholders the tax and revenue resources that were previously part of the general fund.

2.2 Main Functions of Bond Market

A bond market is an integral part of a national financial system and has the following major functions:

(1) Financing. The bond market is an important component of financial markets and helps to raise capital by transferring capital from those who have a surplus of cash to those in need of money. Like the stock market, the bond market provides a direct channel for financing. By issuing debt securities the governments and the corporations raise a large amount of money to make up for the national budget deficit or support the national and local infrastructure projects, key projects construction and urban public facilities construction.

(2) Guiding the flow direction of funds. In general, bonds issued by enterprises with good returns usually are more welcomed by investors. On the contrary, if the economic benefits of enterprises are not good, the risk of bonds issued by this type of enterprises is relatively high, and then these bonds are less popular with investors. As a result, money flows to superior enterprises through the bond market, which facilitates optimal allocation of resources.

(3) Macro-economic control. The central bank, as a national monetary policy formulation and implementation sector, would regulate and control macro-economy by using policy tools such as the reserve, open market operations, rediscount and interest rates. Open market operation is an activity in which a central bank increases or reduces the money supply by buying or selling the government bonds or issue bills and notes on the securities market. When economy is overheating, the central government need to reduce the money supply. In this case the central bank would sell bonds or issue bills and notes to recover part of the money held by financial institutions or the public, so as to control the overheating of the national economy; when economy is in a recession, there is a need to increase the money supply. In this case, the central bank may buy bonds to increase the money supply (Mankiw, 2012).

(4) Providing a benchmark interest rate for the market. From the perspective of the general operations of international financial markets, in a relatively sound financial market, only the interest rate of those financial products with good credit and high liquidity can become a benchmark interest rate. Only a highly-liquid, open bond market with mature price discovery mechanism can provide a meaningful benchmark interest rate for the market. The securities issued by the U.S. Department of the Treasury are backed by the full faith and credit of the U.S. government. Consequently, market participants throughout the world think that Treasury securities have no credit risk. Therefore, interest rates on Treasury securities are the key interest rates in U.S. economy as well as in international capital markets. (Fabozzi, 2012)

(5) Prevention of financial risks. A relatively sound bond market can effectively reduce the risk of a country's financial system. A highly liquid, open bond market not only provides a benchmark interest rate for the market, but is also an important support to the internationalization of a national currency. The bonds issued by a bank may greatly replenish Tier 2 capital (supplementary capital) of bank, especially the issuance of subordinated bonds makes the bank not only get a medium and long-term source of fund and also get the constraints of creditors, which is favorable for the sound operation of a bank. The bond investment is highly market-oriented. For instance, if corporations don’t pay the creditors interests and repay them the principal on the maturity date, bondholders

would vote with their feet. In the context of bond financing, once they fail to pay their debts back, the corporations may quickly lose their reputation in the investor group, and the information disclosed by the bond market will spread to the whole society, which will effectively prevent the corporations from excessive financing.

2.3 Bond Trading Mechanism

The mechanism of trading differs from one exchange to another, and the government places some constraints on how Exchanges operate. The mechanism of trading that an exchange uses is important to investors because different mechanisms lend themselves to different trading volume limitations and pricing behaviors. The bond trading mechanism is very important to bond markets and directly determines the operational efficiency and functions of the market.

The bond trading is generally divided into trading on an exchange and trading over the counter. The former refers to the trading which happens on an exchange, and over-the-counter trading, also called off-exchange trading, is done directly between two parties through networks, telex and phones. These two markets have different organizational forms and trading mechanism.

2.3.1 Trading on an Exchange

The leading mode of bond trading on an exchange is an order-driven system, which matches buying and selling orders of the investors. This trading system features price priority rule and time priority rule. Under the price priority rule, a selling (buying) order with the lowest (highest) price takes precedence. Under the time priority rule, an earlier order takes precedence over others at the same price. Thus, the price at which a bond is traded represents the highest price that a buyer is willing to pay and the lowest price that a seller is willing to sell at. Matching bids and offers are then paired together and the orders are executed. An order-driven system is also called an auction system. According to the difference in transaction continuity, the auction system can be classified into a periodic call auction and a continuous auction (Yuan, 2005).

In a periodic call auction, a trading system continuously collects the orders submitted by dealers during a certain period. After finishing the collection of orders, the system will generate the execution price (traded price). Furthermore, the generation of the execution price has to satisfy three requirements at the same time. First, the trading volume should be the largest. Second, the buy orders with a higher price than the execution price and the sell orders with a lower price than the execution price should be fully executed. Thirdly, either the buy orders with an equal price to the traded price or the selling orders with an equal price to the traded price should be fully executed at least. The advantage of a periodic call auction is to make the execution price furthest reflect the real supply and demand of market.

In a continuous auction, after being sent into the trading system, a transaction order immediately matches with the other orders in an order book. When a new order comes in, if the purchasing price of this order is higher than the existing lowest sell price, or the sell price of this order is lower than the existing highest buy price, this order can be executed. The traded price is the existing highest buy price and the existing lowest sell price respectively. If a newly input order is a market price order, the limit price of the counterparty's limit order is taken for an execution price. If this order cannot be executed, in accordance with price priority and time priority this order would wait for new orders to match, along with existing orders (Shen, 2014).

2.3.2 Trading over the Counter

Unlike trading on an exchange, over-the-counter trading has no fixed trading place. Over-the-counter trading market is generally divided into the interdealer market and the dealer-to-customer market. Currently, a quote-driven system is used in almost all the over-the-counter bond markets. A quote-driven trading system is one in which orders trade at prices set by market maker quotes rather than by being matched against other investor's orders. The order-driven market displays all of the bids and asks, while the quote-driven market focuses only on the bids and asks of market makers and other designated parties.

Market makers are very important for maintaining liquidity and efficiency for the particular securities that they make markets in. Market makers compete for customer order flows by displaying buy and sell quotations for specific numbers of specific securities. The difference between the price at which a market maker is willing to buy a security and the price at which the firm is willing to sell it is called the market maker spread. Because each market maker can either buy or sell a security at any given time, the spread represents the market maker's profit on each trade. Once an order is received, the market maker immediately sells from its own inventory or seeks an offsetting order. OTC markets are less transparent and operate with fewer rules than do exchanges.

2.4 Regulatory System of the Bond Market

The regulatory system of a country's bond market is affected by various factors including the economic level, the political and economic system, the bond market size and development state, and historical and cultural differences. Currently, the regulatory system of the international bond market is not the same. The regulatory system of the bond market can be roughly divided into three types: centralized regulatory system, self-regulatory system and intermediate regulatory system (Wang, 2015).

2.4.1 Centralized Regulatory System

The centralized regulatory system is a system in which the government develops the laws and regulations governing the bond market and establishes a national regulatory body to supervise the whole country's bond market. This regulatory system is also known as "centralized legislative type supervision system". The characteristic of this regulatory system is that the government dominates the market supervision and other self-regulatory organizations (such as securities exchanges and Securities Dealers Association) assist in the government regulation.

The United States is the representative of the countries that implement this regulatory system. The bond market management is a very complex and arduous task and it is difficult for a national securities regulatory body alone to perform its duty very well without the help of the Stock Exchange and the Securities Dealers Association. Therefore, in the countries that execute the centralized regulatory system, increasingly great importance is attached to the self-regulation from the securities exchanges and the Securities Dealers Association

Centralized regulatory system has the following advantages:

(1) Unified management. There are special laws and regulations governing the behavior of the bond market, greatly enhancing the authority of the bond market regulation.

(2) Regulatory independence. The regulators with special status take their responsibilities for maintaining the openness, fairness and justice of the bond market, therefore, the investors can be better protected and the co-ordination of the entire bond market can be strengthened.

Of course, centralized regulatory system has its own problems.

(1) In the process of regulation, there occur some problems in the coordination between self-regulatory organizations and the government agencies.

(2) It is inevitable that the authorities interfere in the administration.

(3) Sometimes it impossible to react to the sudden changes in the market and take effective measures timely.

2.4.2 Self-regulatory System

Self-regulatory system is a system in which the government seldom interferes in the bond market except formulating some necessary laws or rules, and the bond market is regulated mainly by the securities exchanges and the Securities Dealers Association. The main characteristic of this system is that no special laws and regulations are formulated for the bond market and generally there is no special regulatory body. The market regulation depends on the self-discipline and self-regulation of the securities industry.

Currently, self-regulatory system is not widely used. Britain is the representative of the countries which implement this system. The main advantages of self-regulatory system are as follows:

(1) It can minimize the government’s intervention in the bond market, ensuring the

bond investors can buy or sell bonds in accordance with market rules.

(2) It is more sensitive to respond to changes and sudden events in the market.

The disadvantages of self-regulatory system include:

(1) Self-regulatory system lacks in the authority and enforcement force of the government regulation, resulting in randomness and weakening the function of laws.

(2) Whether self-regulation can effectively work greatly depends on a nation's self-regulatory tradition and its entire economic and legal environment. For a country having no self-regulatory tradition, if self-regulation is its dominant regulatory model, it is difficult to achieve a good regulation.

2.4.3 Intermediate Regulatory System

Intermediate regulatory system is one in which both legislative management and self-regulation are emphasized. This system is the result of the coordination and mutual penetration of centralized regulatory system and self-regulatory system. As the defects of the above-mentioned two regulatory systems gradually emerged, a growing number of countries have begun the transition from their original supervision system to intermediate regulatory system over recent years. German supervision mode is the typical representative of this system.

3 Overview of the China's Bond Markets

In the early years of the founding of the People's Republic of China, the central government tried issuing government bonds, but didn't begin with the construction of the bond market. The Chinese bond market developed gradually with the deepening of China's reform and opening-up. This section focuses on the description and analysis of the development process, market structure, regulatory system, trading mechanism of the Chinese bond market.

3.1 History of China's Bond Market

The China's bond market has experienced twists and turns in the process of development. The development of China's bond market has undergone the following four phases: the period before the formation of bond market, the period dominated by over-the-counter trading, the period dominated by trading on Exchanges and the period dominated by interbank bond market (An, 2008).

3.1.1 The Period before the Formation of Bond Market

The People's Republic of China was founded in 1949. In the early period of the founding, the country was facing extremely tough economic conditions. On the one hand, the new government needed a great deal of money for the national economic construction, but the government's fiscal revenue was very limited due to a severe shortage of tax revenue sources. On the other hand, the domestic war still continued, resulting in a large quantity of military expenditures. In that tough economic situation, China's central government began to try issuing the government bonds so as to support the national economic construction and military expenditures. In 1950, the central government issued RMB 302 million government bonds. Both the principal and the interest were paid off on November 30, 1956.

After the completion of the national economic recovery tasks, China began to implement the first five-year plan in 1953. Large quantities of funds were needed for the large-scale construction. Only the investment in the capital construction of wholly state-owned enterprises amounted to RMB 58.847 billion, of which RMB 53.118 billion was borne by the central government's finance, accounting for 90.3%. But at that time the national economic base was very backward, the government's fiscal income was limited. It was very urgent for the government to raise funds by issuing bonds. From 1954 to 1958, the Chinese government issued "national economic construction bonds" five times, with total amount of RMB 3.545 billion, and had paid back the principal and interest by 1968. The issuance of above-mentioned government bonds played an important role in the recovery of the national economy and the completion of the first five-year plan. After 1958, influenced by the "far-left" thought, China stopped debt financing both at home and abroad. China didn't issue government bonds over 20 years. During the period from 1949 to 1981, there existed no bond market in China (An, 2008).

3.1.2 The Period Dominated by OTC Trading

After China implemented the reform and opening up policy, China's bond market was gradually formed, developed and entered the period dominated by over-the-counter trading, featuring anonymous paper securities (securities in physical form) and decentralized custodians. After issuance, the bonds were dispersedly kept in custodian institutions. This wasn't a mature OTC market and the development of the OTC market experienced two stages.

The first stage is from 1981 to 1985, when all the bonds weren't allowed to be traded on the open market. Since the issuance of government bonds was resumed in 1981, China had issued government bonds by means of administrative allocation. Buying the government bonds was generally regarded as another way of long-term saving deposits for individual investors. The government bonds were seldom traded in the market. The treasury securities of RMB 4.866 billion were issued in 1981. The purpose of this issue is that the central government realized that except financing through the central bank, another way of financing must be used to minimize the inflation. The limited issuance of enterprise bonds was approved for the first time in early 1982. All bonds were not allowed to be publicly transferred during this period, but some bondholders sold the bonds to other investors for cash in private (An, 2008).

The second stage：over-the-counter trading period from 1986 to1991. Banks and non-bank financial institutions were approved to issue financial bonds in 1985. With the approval of Shenyang Branch of the People’s Bank of China, Shenyang Trust and Investment Corporation began to provide enterprise bonds and other securities transfer service on Aug.5，1986. Approved by Shanghai Branch of the People's Bank of China, Shanghai Trust and Investment Corporation of Industrial and Commercial Bank of China began to undertake securities brokerage on September 6, 1986. Under the approval of the Ministry of Finance, a pilot program was launched in 1988 to allow the government bonds to be transferred in 54 medium and large-size cities in China successively. Local bond trading centers and OTC bond trading market were formed.

The Shanghai Stock Exchange (SSE) was in operation in December 1990 and started book-entry bond trading, opening up an Exchange bond market. With the approval of the State Council, the government bonds could be transferred in 400 cities in China in 1991 in order to further enhance the liquidity of government bonds. As a result, more than 1000 securities intermediary institutions of various sizes were established, and annual trading volume of government bonds amounted to RMB over 33 billion. In the third quarter of 1991, government bond’s repurchase transaction emerged in Beijing, Wuhan, Shanghai and Tianjin in succession. A nationwide secondary market was formed. So far, China's OTC bond market was formally formed (An, 2008).

Throughout this phase, the products of China’s bond market mainly consisted of government bonds and enterprise bonds (including financial bonds). The purpose of issuance was to make up for the government’s fiscal deficit and raise funds for the construction, but not for the development of the bond market. The issuer of bonds was the Ministry of Finance. Even the issuance of enterprise bonds also needed approval of the central bank (the People’s Bank of China) and the bank guarantee. In fact, enterprise bonds were of public debt nature, and the insurance of enterprises bond mainly relied on the administrative allocation. In this phase, a unified bond market wasn’t formed all over the country, and hence this phase was the infancy of China’s bond market development.

3.1.3 The Period Dominated by Trading on Exchanges

This period is from 1992 to 2000 and dominated by trading on Exchanges. As Shanghai Stock Exchange and Shenzhen Stock Exchange were founded and began to transact the bonds, the Exchange market and the over-the-counter market coexisted in China. However, in the early period of the founding of the Exchanges, the vast majority of bonds were still traded in the OTC market. In 1993, the government bond futures trading was piloted and the government bond repurchase started on the Shanghai Stock Exchange. Up to this time, the spot, futures and repo transaction of the government bonds could be done on the Shanghai Stock Exchange, which resulted in the substantial increase in the volume of bonds transaction on an Exchange. Then, in 1994, the Shenzhen Stock Exchange started the bonds trading (Shen, 2014).

Due to the occurrence of high risks, some regional trading centers including Wuhan Securities Trading Centre, Tianjin Securities Trading Centre and Beijing STAQ system were asked to stop bonds trading in 1995 and only Shanghai and Shenzhen Stock Exchanges were allowed to trade the bonds. It is worth noticing that the government bonds trading risk-control mechanism wasn’t established though all the bonds were traded on the two Stock Exchanges. The rule-breaking behaviors occurred frequently in the government bonds trading on two Exchanges. The central government decided to temporarily close the government bond futures market. A great number of book-entry government bonds began to be issued on the Shanghai and Shenzhen Stock Exchanges in 1996. As the bond repurchase was done, the bond trading system for the Exchanges was initially established.

In the first half of 1997, for lack of good understanding of the bonds, the institutional investors speculated in the bonds as if bonds were stocks. In June 1997, the People's Bank of China, under the instruction of the State Council, issued *the Notice on Cessation of Repo and Bond Trading by Commercial Banks on the Stock Exchanges*(PBC Notice no. (1997)240), mandating that all commercial banks move their bond repo and bond trading out of the Shanghai and Shenzhen Stock Exchanges and transact them through an electronic trading system provided by the National Interbank Funding Center. Therefore, the inter-bank bond market was formed.

3.1.4 The Period Dominated by Interbank Bond Market

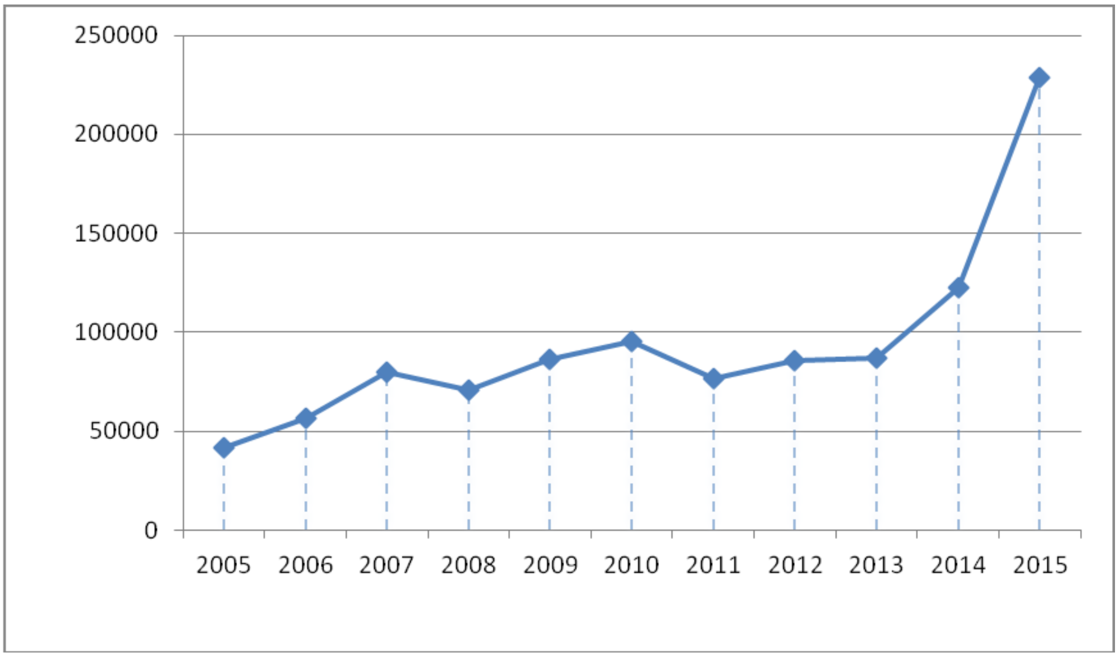
Since 2001, the Chinese bond market has been dominated by the interbank bond market. After the establishment of the inter-bank bond market, the People’s Bank of China, as the regulatory body of the inter-bank bond market, took a series of measures to promote the development of the bond market. However, because there were very few bond products in the interbank market and the investors didn’t know how to transact, the trading volume of the inter-bank bond market accounted for less than 2% of the total trading volume of China’s bond market at the end of the 1990s. As the country increased its efforts to promote the capital market development, and the relevant policies and measures for the market development were gradually put in place, the issuance amount, trading volume and outstanding amount of bonds in the inter-bank bond market exceeded those in the exchange bond market for the first time in 2001. Since the People's Bank of China has made great efforts to promote the bond market innovation in 2004, the bond products and trading instruments in the inter-bank bond market have continued to increase and the means of bond transaction continued to be improved. Currently, the issuance amount, trading volume and the outstanding amount of bonds in the inter-bank bond market all accounted for more than 90% of China's bond market share. China's bond market entered the fast traffic lane of development, the bond market issuance, custody and transactions grew rapidly (Shen, 2014).

The amount issued in China’s bond market was only RMB 0.4 trillion in 1997. As can be seen in Figure3.1, the issuance in China’s bond market amounted to RMB 22.3 trillion in 2015, with an average annual growth rate of 40.2%. The trading volume of China’s bond market increased from RMB17 trillion in 1997 to RMB 673.88 trillion in 2015, with an average annual growth rate of 41.39%. The trading volume in the inter-bank bond market represented 86% of the total trading volume in China’s bond market. The outstanding amount of bonds increased from RMB 0.5 trillion in the end of 1997 to RMB

44.78 trillion in the end of 2015 in the Chinese bond market. The bond market played an important role in financing.

Fig. 3.1 Issuance in China's Bond Market from 2005 to 2015

Unit: RMB 100 million



Source**:** PBC, CCDC, www.chinabond.com.cn, www.wind.com.cn; Author

3.2 Basic Structure of China's Bond Market

With the deepening of Chinese economic system reform and Chinese financial system reform, the structure of China's bond market was gradually improved. This section focuses the description and analysis of the organizational form, market participants, bond types and trading instruments.

3.2.1 Organizational Form

The Chinese bond market consists of the primary market and the secondary market. The primary market is where the bonds are issued and funds are raised and the secondary market is where the bonds are traded (Shen, 2014).

The participants in the primary market mainly include bond issuers, bond subscribers and bond underwriting institutions. Bonds are issued by way of public offering, private placement and underwriting. The issuance of bonds cannot only raise funds for the government, financial institutions and industrial and commercial enterprises and so on, but also is important for the government to implement the macro-control of economy and mitigate the financial risks. Since the implementation of the reform and opening-up policy, China's bond market has been gradually established and developed. The issuers have gradually expanded from the central government to the local governments and from financial institutions to non-financial institutions. The types of bonds have gradually increased from ordinary bonds to asset-backed bonds and from bonds issued solely for financing to derivatives including interest-rate swaps and interest-rate futures.

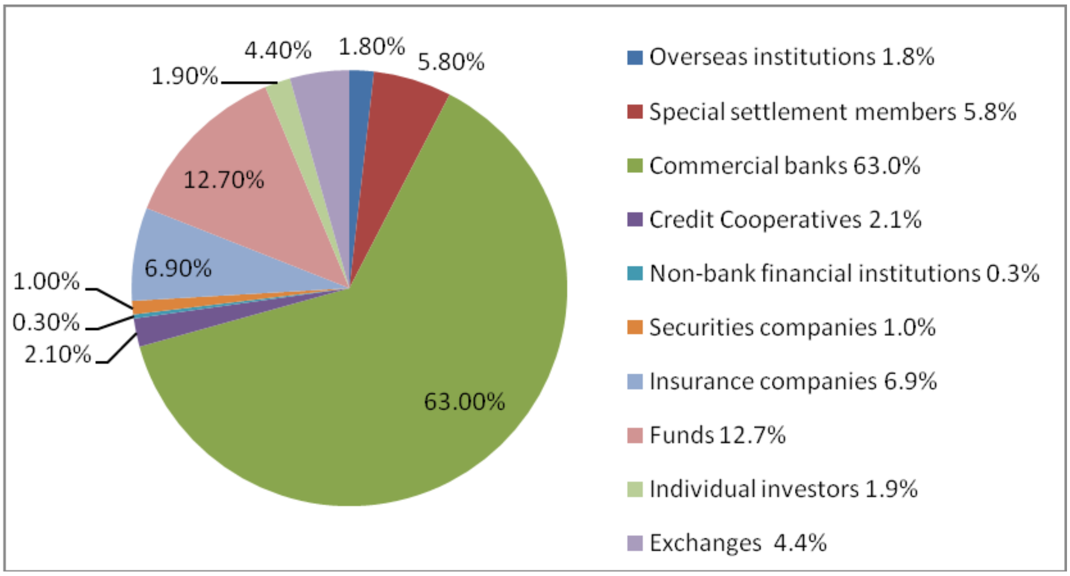
The Chinese bond trading market consists of the off-exchange bond market and the exchange bond market. The off-exchange bond market includes the inter-bank bond market and the commercial bank OTC market.

The exchange bond market in Chinese mainland refers to Shanghai Stock Exchange and Shenzhen Stock Exchange, of which the Shanghai Stock Exchange shares a larger proportion of the bond trading. Currently, China Central Depository and Clearing Co. Ltd (CCDC) is the designated registration, custody and settlement institution for the China's exchange bond market. As of the end of 2015, the outstanding amount of bonds in the exchange bond market was RMB 2.43 trillion, accounting for 5.43% of the total outstanding debt amount in China's bond market.

The interbank bond market is where large trades are executed by institutional investors. As of the end of 2015, the number of participants in the interbank bond market was 9642 in total, of which 9334 were domestic institutional investors and 308 were foreign institutional investors. Figure 3.2 shows the structure of investors in the interbank bond market in 2005. The trading volume of interbank lending, spot trades and bond repo trades was RMB 608.8 trillion, up 101.3% over last year.

The commercial bank OTC market is also a part of the off-exchange bond market. This market mainly refers to where the commercial banks offer a variety of bond trading services to the investors through theirs outlets and electronic systems. In accordance with the relevant regulations of the People's Bank of China, the book-entry government bond trading was officially introduced in the commercial bank OTC market in April 2002.The types of bonds were increased in the commercial bank OTC market in 2014. The People's Bank of China issued the relevant management methods of bank OTC bond operations, stipulating that the bonds traded in commercial bank OTC market include government bonds, local government bonds, policy bank bonds, etc. and that the types of investors include financial institution, public utilities， funds and domestically–funded enterprises and foreign-funded enterprises and individual investors with high net worth.

Fig. 3.2 Structure of investors in the interbank bond market in 2015



Source: Li (2015); Author

3.2.2 Market Participants

With the rapid development of China's bond market, there are an increasingly wide range of market participants.

(1) Issuers. From the perspective of issuers, if they have issuance qualifications, whether the central government, local governments, or various government-backed institutions, commercial banks, non-bank financial institutions, international development agencies, non-financial enterprises and other legal entities, can raise funds by issuing bonds.

(2) Investors. From the perspective of investors, the market participants include institutional investors and individual investors. The institutional investors include banks, non-bank financial institutions (including fund companies, finance companies and

insurance companies, etc.), non-financial institutions and hybrid funds (including securities investment fund, enterprise annuity and trust products).

(3) Credit rating agencies. According to the relevant regulations of Chinese bond issuance, prior to the issuance of bonds, the credit risks of bonds must be comprehensively evaluated by professional credit rating agencies. The credit grade of issuer tends to be the threshold of the access to the bond issuance market. For the purpose of the safety of the bond market, foreign credit rating agencies are currently not allowed access to China's bond market. Nowadays, in China, there are nine major companies with bonds issuance rating qualifications including Dagong Global Credit Rating Co., Ltd. and Joint Credit Rating Co., Ltd.

(4) Registration, custody and clearing institutions. In order to clear the relationship between debtors and creditors and protect the rights and interests of investors, China Central Depository & Clearing Co., Ltd(CCDC), China Securities Depository & Clearing Corporation Limited(CSDC) and Shanghai Clearing House were established early or late to provide centralized registration, custody, clearing and settlement services for China's bond market. CCDC and Shanghai Clearing House take joint responsibilities for the issuance, custody, clearing and settlement services in the interbank bond market, while CCDC is the first-tiered bond depository for the commercial bank OTC market and the general bond depository for the government bonds on the exchange market. CSDC is charge of the registration and settlement services in Shanghai and Shenzhen stock exchanges.

(5) Regulators. At present, the regulatory bodies mainly consist of government regulators, self-regulatory organizations and intermediary agencies. The government regulators mainly include the Ministry of Finance, the People's Bank of China, China Banking Regulatory Commission， China Securities Regulatory Commission and National Development and Reform Commission. The self-regulatory organizations mainly refer to Shanghai and Shenzhen stock exchanges, securities depository and clearing corporations, Securities Association of China and local securities associations. The intermediary agencies are mainly composed of accounting firms, auditing firms and credit rating agencies. Only these three aspects of regulatory bodies make joint efforts and make full

use of their own strengths, the effective regulation of the bond market can be achieved.

3.2.3 Types of Bonds

Over many years' development, the types of bonds in the Chinese market are continually enriched (shown in table 3.1). The bonds offered in the Chinese market are roughly divided into four major types: government bonds, central bank notes, financial bonds and non-financial corporate bonds.

Government bonds are issued by the Ministry of Finance to finance government spending. Local governments also issue bonds, similar to municipal bonds in the U.S.

Central bank notes are short-term securities issued by the People's Bank of China (PBC) as a tool for implementing monetary policy. They are often used in money market and liquidity management portfolios due to the notes' short maturities.

Financial bonds are the most actively traded bonds in China and issued by policy banks, commercial banks and other financial institutions. Currently the International Finance Corporation and the Asian Development Bank has issued renminbi-denominated bonds in the inter-bank bond market.

Non-financial corporate bonds include a wide variety of bonds, of which the largest sectors are enterprise bonds and medium-term notes. Enterprise bonds are issued by institutions affiliated to central government departments， enterprises solely funded by the state, state-controlled enterprises and other large-size state-owned entities. Corporate bands can be issued by any company as long as the relevant criteria are met. Companies can also issue short-term financing bills (or commercial paper) and medium-term notes, which are the most liquid non-financial corporate bonds (Shen, 2014).

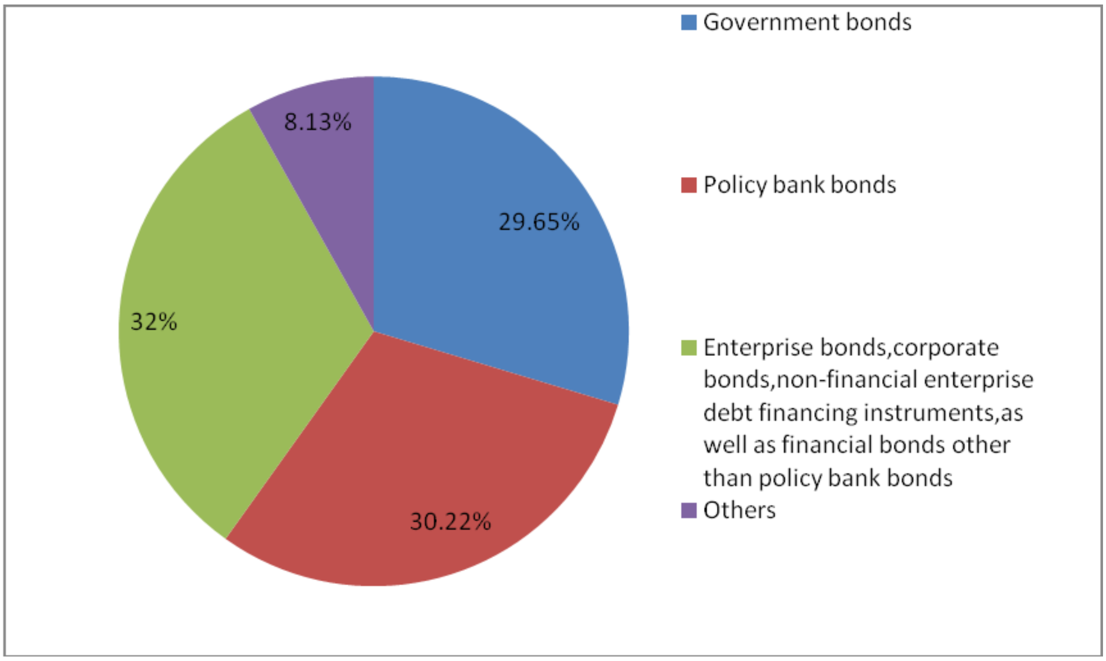
As of the end of 2015, the government bonds, policy bank bonds and corporate credit bonds held a larger share of the Chinese bond market, of which 29.65% of outstanding bonds in China were government bonds, 30.22% are policy bank bonds and 32% are enterprise bonds, corporate bonds, non-financial enterprise debt financing instruments and financial bonds excluding policy bank bonds (shown in Fig. 3.3).

Table 3.1 Main Types of Bonds in the Chinese Market in 2015

Interbank Market		Commercial Bank OCT Market	Two Exchanges
CCDC	Shanghai Clearing House	CCDC	CSDC
Government Bonds	Short-term financing bills	Book-entry government bonds	Government bonds
Policy bank bonds	Ultra-short-term Commercial Papers	China Development Bank bonds	Local government bonds
Government-backed Institution bonds	Medium-term notes	Policy bank bonds	Policy bank bonds
Commercial bank bonds	Joint bonds	Government-backed Institution bonds	Enterprise bonds
Capital instruments	private placement notes	——	Corporate bonds
Non-bank financial institution bonds	Financial enterprises short-term financing bills	——	Convertible bonds
Enterprise bonds	Non-financial enterprises asset-backed notes	——	Small and medium-size enterprise private placement bonds

Source: Li (2015); Author

Fig. 3.3 Proportion of various types of outstanding bonds in 2015



Source: www.wind.com.cn; Author

3.2.4 Trading Instruments

The trading instrument in the bond market is also known as the means of transaction in the bond market. There were only two basic means of transaction: spot trade and pledged repo in China's bond market in 1997. Bond outright repo was introduced in 2004. To meet the diversified needs of market participants, some derivative products (including bond forward transaction, RMB interest rate swap and forward interest rate agreements) and bond lending were launched in the inter-bank bond market later. The gradual increase in trading instruments played an active role in helping the investors to avoid the risk of the bond market, improve market liquidity and facilitate the price discovery.

The interbank bond market includes all above-mentioned trading instruments, while there are only spot trades and pledged repo in the exchange bond market, which resulted from the order-driven system on an exchange. In terms of the trading volume of trading instruments, the trading volume of the present Chinese bond market is mainly concentrated in spot trade and pledged repo.

3.3 Regulatory System of China's Bond Market

The regulatory system of China's bond market involves various government regulatory departments. The departments concerned work together to maintain bond market stability and promote the development of the bond market (Fan, 2008).

3.3.1 General Features

At present, the Chinese bond market regulatory system is a decentralized multi-sectorial regulatory regime. The main regulatory bodies include the People's Bank of China，the National Development and Reform Commission, the Ministry of Finance, China Securities Regulatory Commission, China Banking Regulatory Commission and China Insurance Regulatory Commission. The market is regulated by the People's Bank of China and China Securities Regulatory Commission. The industry bodies are regulated by China Banking Regulatory Commission, China Securities Regulatory Commission and

China Insurance Regulatory Commission. The issuance of enterprise bonds is approved by the National Development and Reform Commission. The Ministry of Finance is responsible for a part of management affairs in terms of issuance and circulation of government bonds (Fan, 2008).

3.3.2 The Market Regulation

The People's Bank of China and China Securities Regulatory Commission are the Chinese bond market regulatory bodies. The People's Bank of China is responsible for the regulation of the interbank bond market and the commercial bank OTC bond market. The China Securities Regulatory Commission is responsible for the regulation of the exchange bond market.

As the regulatory department of the interbank bond market and the commercial bank OTC bond market, the People' Bank of China is responsible for the regulation of the issuance of financial bonds and renminbin-denominated bonds issued by the international finance institutions. The People' Bank of China authorizes National Association of Financial Market Institutional Investors to manage the registration of company's short-term financing bills and medium-term notes. The People' Bank of China, together with China Securities Regulatory Commission, supervise and manage the issuance of short-term financing bills by securities companies. In addition, the People's Bank of China is charge of the daily market management, which includes the market entry and exit for market makers, settlement agents, currency brokerage companies, commercial bank counter dealer and other market participants. Furthermore, the People's Bank of China is responsible for the punishment of rule-breaking behaviors concerning trading, custody and settlement in order to maintain normal market order (Fan, 2008).

In the primary market regulation, China Securities Regulatory Commission is responsible for the regulation of the issuance of corporate bonds (currently limited to listed companies' corporate bonds, convertible bonds, etc.) Besides, the issuance of securities companies' short-term financing bills is jointly regulated by China Securities Regulatory Commission and the People's Bank of China. In the secondary market regulation, China Securities Regulatory Commission is responsible for the supervision and management of the exchange bond market. Under the direction of China Securities Regulatory Commission，Shanghai and Shenzhen stock exchanges, China Securities Depository and Clearing Corporation Limited (CSDC) and other intermediary agencies are responsible for the specific supervision and management. These agencies develop the rules of bond listing, custody, trading and settlement, and carry out daily monitoring and management of bond transaction in the exchange bond market.

3.3.3 The Regulation of Industry Bodies

As the regulators of industry bodies, China Banking Regulatory Commission, China Securities Regulatory Commission and China Insurance Regulatory Commission supervise and manage the bond market businesses undertaken by the industry bodies.

China Banking Regulatory Commission is responsible for the supervision of banks in the bond market. Its main duties are as follows.

(1) To examine and approve the banks' qualifications for operations in the bond market. In approving the establishment of a new financial institution, China Banking Regulatory Commission usually examines and approves this institution's qualifications for investing in, underwriting and issuing financial bonds.

(2) To supervise the risk management ability of banks.

China Banking Regulatory Commission's supervision over banks' businesses in the bond market focuses on whether the banks develop a sound internal control mechanism and a risk management system, with emphasis on the guide, inspection and supervision of financial institutions in establishing sound operation specifications, risk management systems as well as reporting and information disclosure system to prevent credit risks, market risks, liquidity risks, operational and legal risks, etc.

China Securities Regulatory Commission takes responsible for the supervision of securities institutions engaging in the bond business (Wang, 2015).

(1) To examine and approve the securities institutions' qualifications for proprietary trading. Proprietary trading here means the securities institutions trade bonds with their

own money or money raised, as opposed to the depositor's money, to make a profit for themselves. The scope of approval mainly includes the proprietary trading and issuance of bonds. In addition, the securities companies should report to China Securities Regulatory Commission or submit the applications for approval in advance before investing in new bond products and offering new services. China Securities Regulatory Commission will decide whether the securities companies are allowed to enter the bond market after the evaluation of the corporate governance structure, internal control mechanism, risk management ability, etc.

(2) To supervise the risk management ability of securities institutions. The securities institutions are required to submit to China Securities Regulatory Commission or its branch institutions the monthly net capital calculation sheets, risk capital reserve calculation sheets and risk control indicator statements. Through establishing the risk control indicator system with net capital as the core, China Securities Regulatory Commission strengthens the risk supervision of securities institutions and urges them to hedge their risks.

China Insurance Regulatory Commission (CIRC) is responsible for the supervision of insurance companies engaging in the bond business. CIRC makes it clear that insurance companies can invest in government bonds, financial bonds, enterprise (corporate) bonds and other bonds that CIRC agree. Insurance companies should, in line with *Guidelines for Insurance Funds Operation Risk Control*, develop a bond investment risk control system and work out a scientific, rigorous and efficient operational process. In addition, CIRC places some restrictions on the bond investment by insurance companies. For instance, in case an insurance institution invests in various bonds (excluding government bonds, central bank notes, financial bonds of policy banks or subordinated bonds of policy banks） issued or guaranteed by the same issuer, the sum of the balance of aforesaid various bonds may not exceed 20% of the total assets of the above-mentioned insurance institution at the end of the previous quarter as calculated at the cost price (Wang, 2015).

3.4 Trading Mechanism of China's Bond Market

After the implementation of the reform and opening-up policy, Chinese bond market trading mechanism was gradually formed on the basis of international experience. China's bond market trading mechanism mainly includes quote-driven system, market maker system and order-driven system (Shen, 2014).

3.4.1 The Quote-driven System

A quote-driven system is mainly used in China's interbank bond market. Currently, the vast majority of the inter-bank bond market transactions are achieved by way of one-to-one quotations. Most of the market participants execute their transactions through China Foreign Exchange Trading system and some participants complete their transactions on telephone or through instant messaging system.

In order to improve the quote-driven system, the People's Bank of China has established a brokerage system for the interbank bond market. Currently, the monetary brokerage firms in the interbank bond market mainly include Shanghai Guoli Monetary Brokerage Co., Ltd, Shanghai International Monetary Brokerage Co., Ltd and Ping An Lishun International Monetary Brokerage Co., Ltd. These brokerage firms operate in the following mode (Shen, 2014).

(1) The financial institution (client) presents the specific trading requirements to the brokerage firm.

(2) The brokerage firm releases the information on trading requirements on telephone or through instant messaging system to find out the prospective traders.

(3) According to received price quotations, the brokerage firm provides appropriate recommendations for the client and quotes the best price.

(4) The client decides whether to execute the transaction at this price.

(5) If both parties of trading agree to execute the transaction, the brokerage firm will inform both parties of the other party's names and both parties will complete clearing and settlement by themselves.

Brokerage firms have a wealth of information about the bond market, which facilitates the buying and selling of bonds between a buyer and a seller. Inquiring about price through brokerage firms makes the bond trading more convenient and the execution price more favorable. This trading mode through brokerage firms has been increasingly recognized by the market participants (Shen, 2014).

3.4.2 The Market Maker system

The Chinese market maker system was introduced in the interbank bond market in 2001. Since 2007, Shanghai Stock Exchange and Shenzhen Stock Exchange have set up the Integrated Electronic Platform for Fixed-income Securities and the Agreement Transfer Platform respectively. The two platforms use a quote-driven system with the market maker as the core. Over more than 10 years' development, the market maker system has been gradually established in the Chinese bond market, which has played an important role in invigorating the market and enhancing the market liquidity.

Under the Chinese current administrative rules of market makers, a financial institution lawfully incorporated within the territory of the People's Republic of China if it applies for a market maker, shall meet the following requirements:

(1) Having a registered or net capital of no less than RMB1.2 billion;

(2) Having traded actively in the market, with spot bond trading volume ranking top 80 among all participants in the year before application;

(3) Having trial operation of making market in the inter-bank market before the application, and obtained necessary experience and capabilities;

(4) Having a sound internal management system, operational procedures, a good internal risk control mechanism, incentive and performance review scheme;

(5) Having a strong ability in bond market research and analysis;

(6) Having at least five qualified bond market practitioners in relevant business departments, with appropriately set posts and well-defined responsibilities;

(7) Not having violations against laws or serious incompliance of rules and regulations in the two years before application;

(8) Other requirements as stipulated by the People’s Bank of China.

Up to now, China's bond market has 46 market makers, including 22 domestically-funded commercial banks, 8 foreign-funded banks and 16 securities companies. Bond market makers play an important role in guiding rational market quotations and enhancing the market liquidity (Li, 2015).

3.4.3 The Order-driven System

An order-driven system, also called an auction system, is used on Shanghai Stock Exchange and Shenzhen Stock Exchange. There are two kinds of auction: call auction and continuous auction in China’s bond market. The opening call auction runs from 9:15 to 9:25 on each trading day, while the continuous auction runs from 9:30 to11:30 and from 13:00 to 15:00. The price of bonds is determined by price priority, time priority and client priority.

4 Evaluation of the China's Bond Market Development

After over 60 years of development, with the Chinese economic scale expanding and the Chinese financial system reform deepening, China's bond market has entered a "golden time" of development over recent years. The size of the bond market has expanded rapidly, the type of bonds has been continually enriched, the market system and mechanism has been continually improved, the market has become better regulated and the internationalization of market has been further accelerated. The development prospects for the Chinese bond market will be broader.

4.1 Expansion in the Overall Bond Market Size

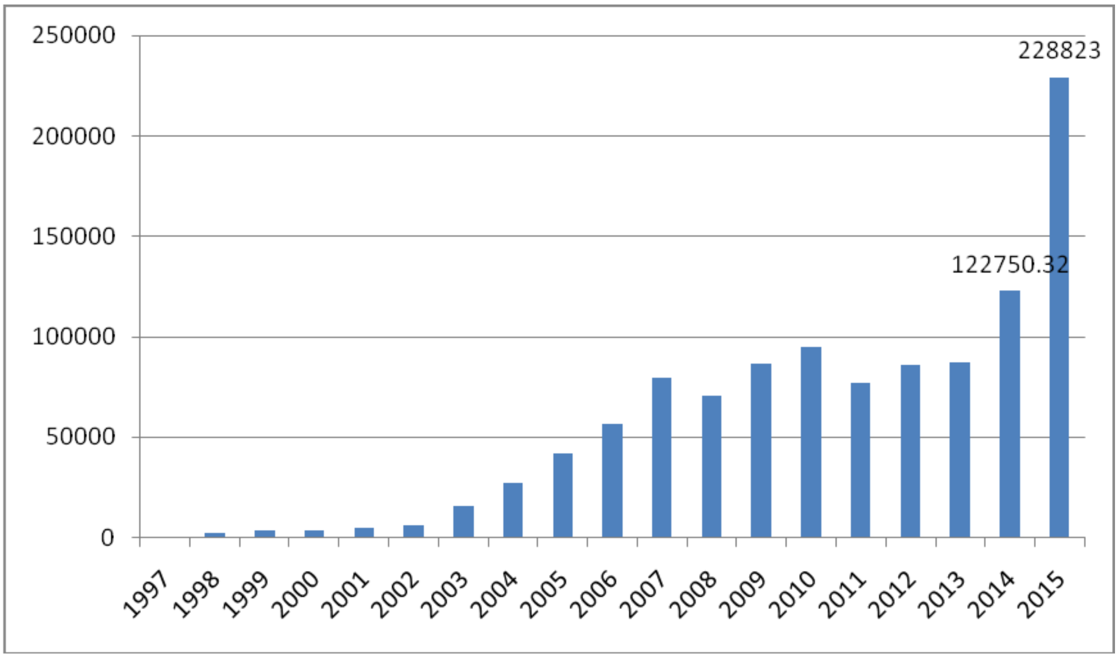
In the recent years, under the increasing downward pressure on the Chinese economy, China's GDP still has kept an average annual growth of about RMB 4 trillion， creating conditions for the rapid development of China's bond market. Since 2012, China's bond market has entered a high-speed development period. This section focuses on analyzing the issuance amount, the amount of outstanding bonds and the trading volume.

4.1.1 Total Issuance Amount

The total issuance amount of the Chinese bond market continued to rise from 2012 to 2015, even exhibiting an explosive growth in 2014 and 2015. In 2012, the gross issuance reached RMB 8.574734 trillion, increasing by RMB 895.432 billion over the previous year, up 11.66% year on year; In 2013, the issuance amount of all the bonds was RMB 8.701627 trillion, increasing by RMB 721.872 billion over last year, up 9.05% year on year; In 2014, under the situation that the PBC didn't participate in issuing bonds, it was the first time that the gross issuance amount had broken through RMB 10 trillion, increasing to RMB 12.275032 trillion, up 41.15% on year-on-year basis; In 2015, the bond market realized a new breakthrough, with the total issuance amount of RMB 22.8823 trillion, rising by RMB 10.607268 trillion from a year earlier, up 86.41% year on year. The issuance scale of China's bond market from 1997 to 2015 is shown in Fig. 4.1 and the total issuance amount of different types of bonds in 2015 is shown in Fig. 4.2.

Fig. 4.1 Total issuance amount of China's bond market from 1997 to 2015

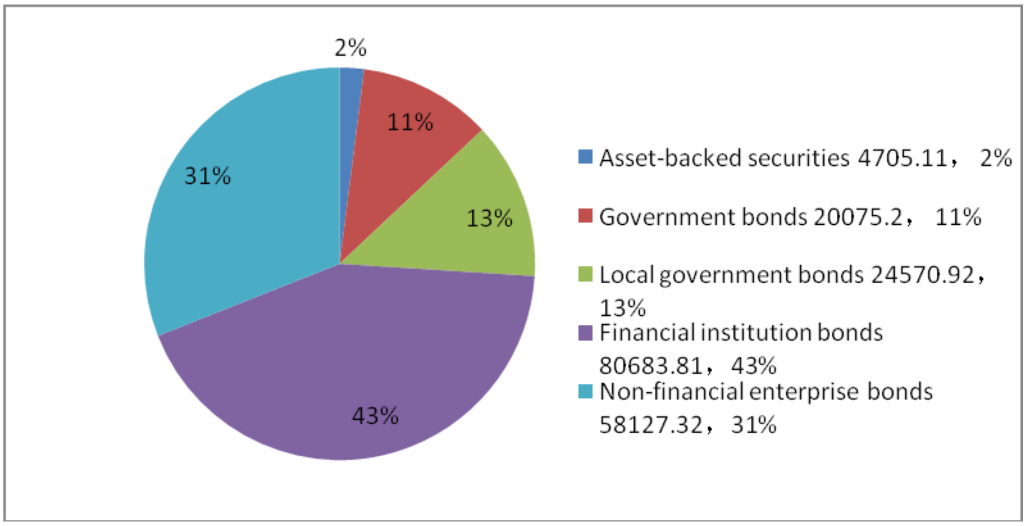
Unit: RMB 100 million



Source: PBC, CCDC, www.chinabond.com, www.wind.com.cn; Author

Fig. 4.2 Total issuance amount of different types of bonds in 2015

Unit: RMB 100 million



Source: Li (2015); Author

4.1.2 Total Outstanding Amount

Based on the Annual Review of China's Bond Market complied by CCDC over recent years, the total amount of outstanding bonds in China's bond market increased rapidly and the overall size of the bond market expanded sharply from 2012 to 2015. At the end of December 2012, the total outstanding amount in the Chinese bond market reached RMB 25.96 trillion, with an increase of RMB 3.89 trillion or 18.08% from a year earlier; At the end of December 2013, the total outstanding amount was RMB 29.48 trillion, with an increase of RMB 3.48 trillion or 13.39% from a year earlier; At the end of December 2014, the total outstanding debt reached RMB 35.64 trillion, with an increase of RMB 6.16 trillion or up 20.9% from the end of last year; At the end of December 2015, the total outstanding debt reached RMB 44.78 trillion, with an increase of 9.13 RMB trillion or up 25.65% from a year earlier. The total amount of outstanding bonds in the Chinese bond market in 2015 is showed in table 4.1. Actually, according to the relative data from Bank for International Settlements (BIS), by the end of November 2015, the total amount of outstanding bonds in China's bond market had already reached USD 6.7 trillion. The Chinese bond market has become the third largest bond market in the world, only after America and Japan, as showed in Fig. 4.3

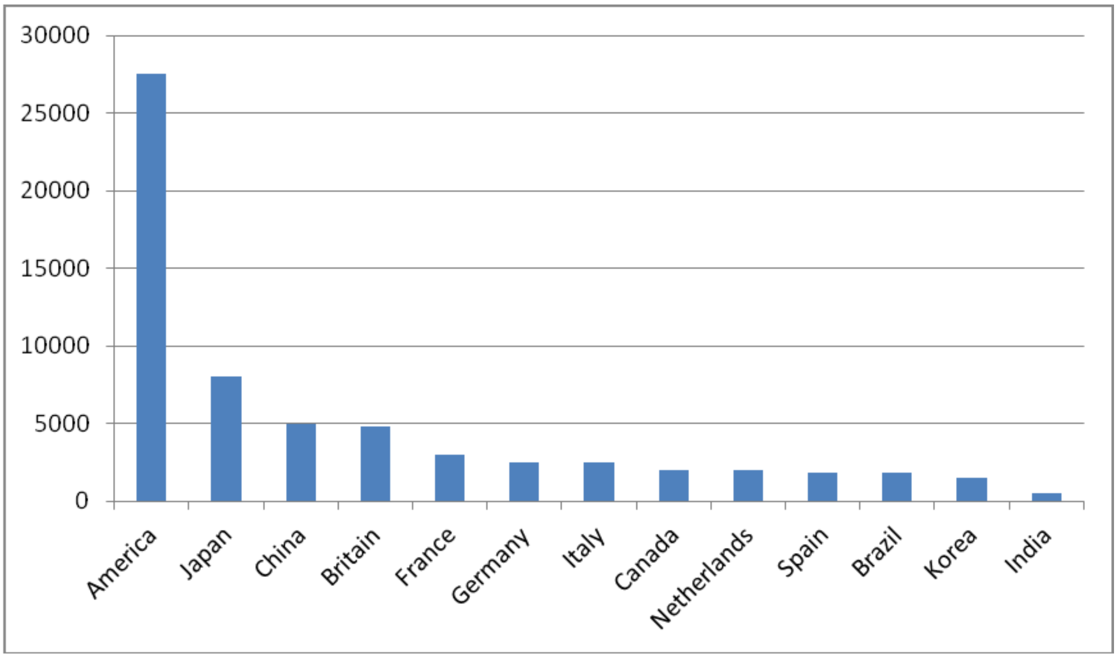
Table 4.1 Total amount of outstanding bonds in the Chinese bond market in 2015

Item	Outstanding (unit: RMB 100 million)
The whole market	447,778.57
Bonds deposited in CCDC	350,454.35
Bonds deposited in Shanghai Clearing House	73,023.11
Bonds deposited in CSDC	24,301.11

Source: www.chinabond.com.cn,www.chinaclear.cn,www.wind.com.cn; Author

Fig. 4.3 The amount of outstanding bonds in the world's major bond markets

Unit: 1 billion USD



Source: BIS, as of November 2015; Author

4.1.3 Trading Activity

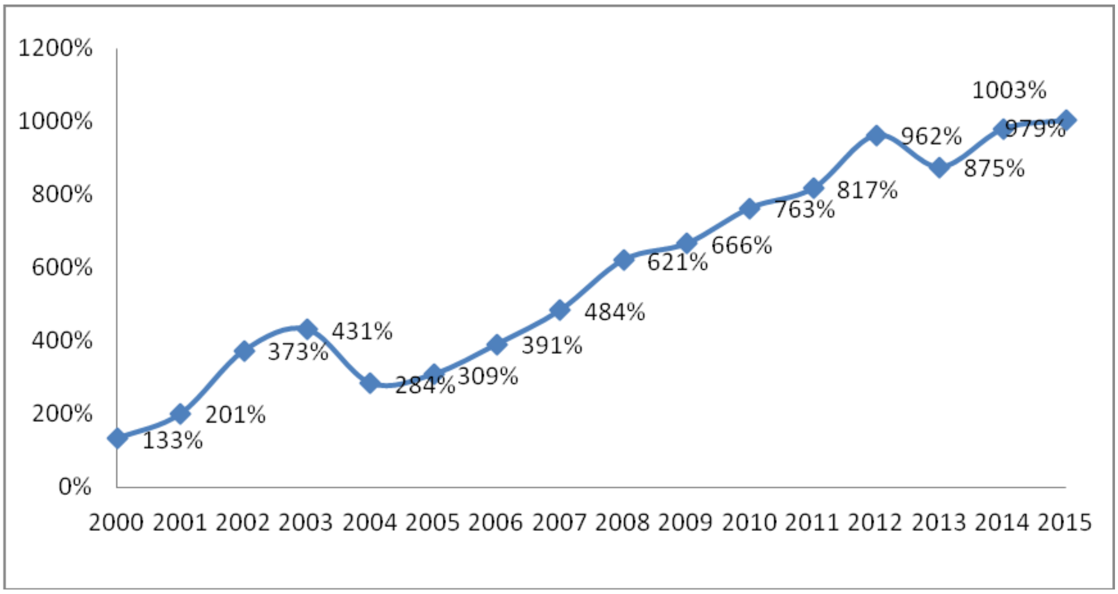
In 2015, the settlement volume of spot trades and repo and bond lending in the Chinese bond market were RMB 674.78 trillion, increasing by 91.36% from a year earlier. Of the total, the settlement volume of spot trades in the whole market were RMB 85.73 trillion, up 111.09% year on year; the settlement volume of repo in the whole market were RMB 588.14 trillion, increasing by 88.79%, as compared with last year. The settlement volume of bond trading in the Chinese bond market in 2015 is shown in table 4.2. Especially, the total transaction amount in the inter-bank market set a record of RMB 442.745366 trillion in 2015, up 42.95% year on year. The ratio of bond trading volume to GDP increased from 35% in 2000 to 908% at the end of September 2015. The above-mentioned data shows that the liquidity of China's bond market has been greatly enhanced. The increase in the trading volume and liquidity is also reflected in the turnover rate. The turnover rate of bonds in the Chinese bond market was from 133% in 2000 to 1003% in 2015, as shown in Fig. 4.4.

Table 4.2 The settlement volume of bond trading in China's bond market in 2015

	Settlement volume(Unit: RMB100 million)
The Whole market	6,747,754.99
CCDC trades(sub-total)	4,663,606.39
Spot trades	605,319.31
Repo	4,049,292.01
Loan lending	8,995.07
Shanghai Clearing House trades(sub-total)	816,988.24
Spot trades	235,805.28
Repo	581,182.96
Two Stock Exchanges trades (sub-total)	1,267,160.36
Spot trades	16,203.12
Repo	1,250,957.24

Source: www.chinabond.com.cn, www.shclearing.com, ww.chinaclear.cn, www.wind.com.cn; Author

Fig. 4.4 Turnover rates of bonds in China's bond market from 2000 to 2015



Source: www.wind.com.cn; Author

4.1.4 Using Bonds as Collaterals

Bonds have been more deeply and widely used as collaterals in the Chinese bond market over recent years. Especially since 2015, a breakthrough has been made in popularizing collaterals management services in financial and commodity futures markets, opening up a new area for collaterals management service. At present, the outstanding amount of the bonds used as collaterals, deposited in CCDC, exceeds RMB 5 trillion, of which the outstanding amount of the bonds used as collaterals for repo, bond lending and open market operations was RMB more than 4.5 trillion. The total amount of government bonds, central bank notes, government-backed bonds and policy bank bonds, presently deposited in CCDC, has exceeded RMB 27 trillion. They are all high quality collaterals, so there will be bigger space for the application of bond collaterals.

4.2 Bond Market Innovations

In recent years, the reform and innovation of the Chinese bond market has been obviously accelerated, with some good results achieved in fundamental construction, market supervision and management, innovation capacity building and market internationalization.

4.2.1 Progress in the Fundamental Construction

With the financial system reform continually deepened, the basic construction of the bond market has been on a sound development track in recent years. First, the infrastructures construction of the core links, like registration, transaction, payment and settlement, has been continually improved, providing a strongly technical support for the development, the investors protection, the risk prevention and the opening-up of the bond market. Second, progress has been made in the management of information disclosure and the credit rating. The constrained market mechanism for information disclosure, credit rating and risk sharing has been formed. The currency brokerage company was introduced into the exchange bond market. The brokerage system and the market-maker system complement each other, further improving the price discovery mechanism. Thirdly, some self-regulatory organizations, such as Securities Association of China and National Association of Financial Market Institutional Investors were established. The risk prevention system, consisting of regulatory bodies, self-regulatory organizations and market participants, was established. Last but not least, since November 2nd 2014, the Ministry of Finance releases China’s key-term Treasury yield curve on its website on a daily basis. Starting from the second quarter in 2015, the Ministry of Finance issues three-month government bonds and six-month government bonds normally. And on November 27th, 2015, it was the first time that the yield on government bond had been released on the website of the Ministry of Finance. Based on this, China's Treasury yield curve of key terms was changed into China's Treasury yield curve, which further enhanced the role of the Treasury yield curve as a benchmark in the national economic operation.

4.2.2 Breakthroughs in Bond Market System

Giving full play to the role of market cannot do without a major breakthrough in the system. Over recent years, the supervision departments and the agencies concerned of China's bond market have continued exploration and taken a series of new systems and new measures beneficial to the healthy market development. For instance, the one-time registration and installment offering system was introduced in the credit assets securitization management. As for the reform of the interbank market, the following steps were taken: the examination and approval for bond trading in the inter-bank market was cancelled; the classified and layered registration and issuance management framework was set up for non-financial enterprise debt financing instrument; under directional issuance framework, the special institutional investor system was introduced. The application procedures for enterprise bond issuance were simplified, but the risk prevention and regulation was strengthened; The procedures for examination and approval of corporate bond issuance was simplified and the means of corporate bond issuance was enriched; The securitization of credit assets was pushed forward.

Currently, some laws including *Securities Law of the People's Republic of China* and *Law of the PRC on the People's Bank of China,* and a variety of relative regulations and rules have provided necessary system guarantee for the stable, orderly and healthy development of China's bond market.

4.2.3 Optimization of Bond Market Investors Structure

As the Chinese bond market developed, the number and type of investors has been increasing and the bond market investor structure has been optimized. Currently, there are nearly 10,000 institutional investors in the interbank bond market alone. At the end of Oct. 2015, the Chinese commercial banks held 61% of the debt in the interbank market, and the debt held by commercial banks fell greatly, compared with the early period of interbank bond market. Simultaneously, commercial bank wealth products, some qualified institutional investors and private placement funds were allowed access to the interbank bond market and the proportion of the debt held by non-bank financial institutions and non-legal person institutional investors has risen. The structure of investors in the bond market is diversified. Take non-financial enterprise debt financing instrument as an example, at the end of 2015, the commercial banks held 36% of corporate bonds, a decrease of 11% year on year. Securities investment funds, enterprise annuity and non-legal person institutions held 22.2% of corporate bonds, up 6% from a year earlier. The increase in the number and type of investors and the optimization of investor structure help to reallocate market risks and maintain stability and security of the financial system. The structure of investors in the main types of bonds at the end of Oct., 2015 is shown in table 4.3

Table 4.3 Structure of investors in the main types of bonds at the end of Oct., 2015

Unit: %

	Government bonds	Policy bank bonds	Commercial bank bonds	Capital instruments	Enterprise bonds	Medium-term notes
Total	100	100	100	100	100	100
Special settlement member	17.31	0.22	0.03	0.34	0.2	1.62
Commercial bank	67.37	73.68	6.37	24.18	21.39	40.71
Credit cooperatives	0.97	3.17	0.26	1.09	3.33	4.93
Non-bank financial institution	0.29	0.15	0.32	0.22	0.35	0.7
Securities company	0.52	0.47	0.07	0.12	4.35	2.42
Insurance institution	3.83	5.69	67.34	0.07	9.15	7.47
Fund	1.57	14.29	25.33	73.71	30.91	39.63
Non-financial institution	0.02	0.01	0.24	0	0.08	0.05
Individual investor	0	0.01	0	0	0	0
Exchanges	5.54	0	0	0	29.67	0
Overseas institution	2.55	2.31	0.03	0.26	0.57	2.48
Other	0.01	0	0	0	0	0

Source: www.chinabond.com.cn; Author

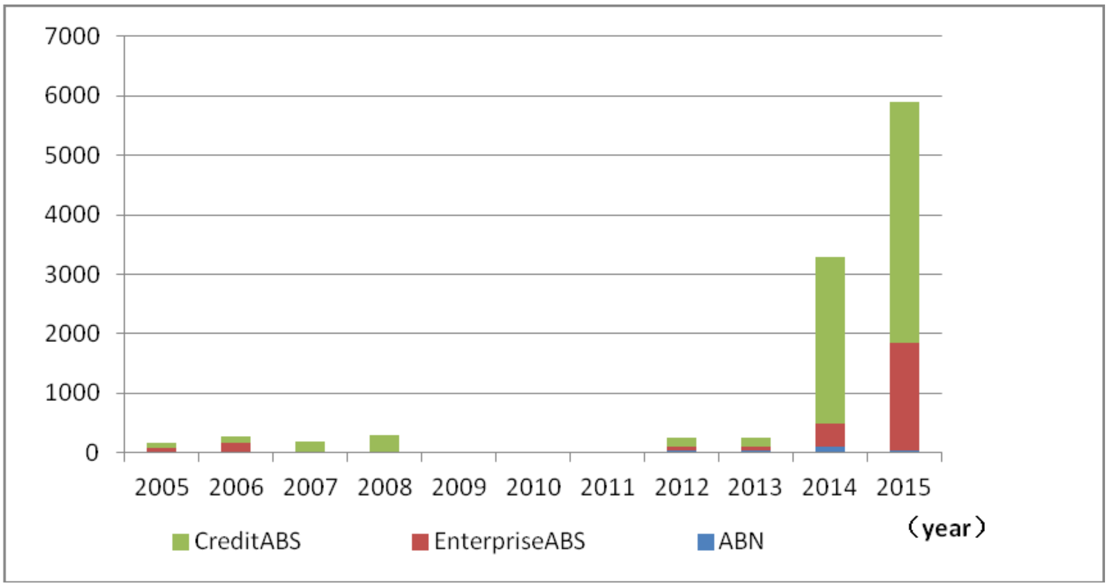
4.2.4 Innovation in Asset Securitization

Asset securitization is a financial innovation aimed to improve liquidity and raise funds. China's credit asset securitization pilot began in 2005. China Development Bank and China Construction Bank, first of all, issued the asset-backed securities and residential mortgage-backed securities respectively, with an issuing scale of RMB 7.196 billion. The issuing scale in 2006 was RMB11.58 billion. At the end of 2008, a total of 11 promoters conducted 16 pilot business operations of credit asset securitization, with a total issuing scale of RMB 66.785 billion. However, the trial program was suspended in 2009 following the US subprime mortgage crisis and the global financial crisis, and was resumed in 2011 (Li, 2015).

In July 2013, the State of Council required that the asset securitization should be pushed forward steadily and the pilot program should be expanded. The Chinese government released a series of favorable policies for the asset securitization. Driven by a series of favorable policies, the innovation in asset securitization has been going on over recent years. The type of assets that can be used as collateral for an asset securitization has increased. The categories of assets that have been securitized include: corporation loans, auto loans, residential mortgage loans, financing leasing, asset-backed notes, small business loans and public housing fund. As of the end of 2015, there were 1386 asset securitization products issued in China, and their total amount was RMB 593.039 billion, up 79% from a year earlier; the amount outstanding was RMB 717.889 billion, an increase of 128% year on year. The issuance amount and the amount outstanding in asset securitization market in the year 2005-2015 are shown in Fig. 4.5 and 4.6.

Fig. 4.5 The issuance amount in asset securitization market in the year 2005-2015

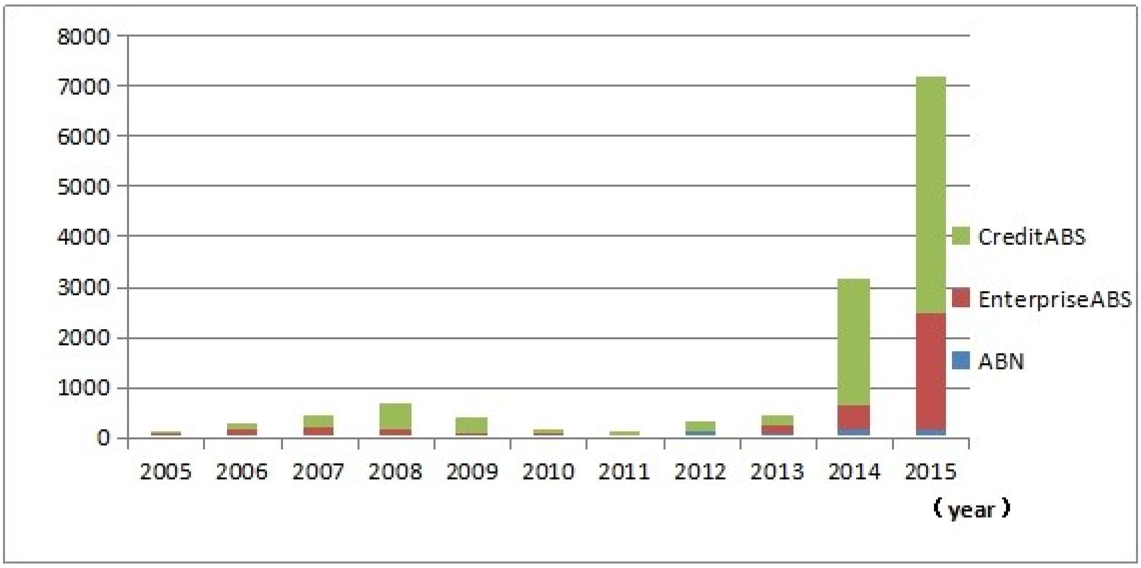
Unit: RMB 100 million



Source: www.wind.com.cn, CCDC; Author

Fig. 4.6 The amount outstanding in asset securitization market in the year 2005-2015

Unit: RMB 100 million



Source: www.wind.com.cn, CCDC; Author

4.2.5 Internationalization of Bond Market

The Qualified Foreign Institutional Investor (QFII) program was launched in China 2002. With the approval of CSRC and State Administration of Foreign Exchange, the qualified foreign institutional investors were allowed to enter Shanghai and Shenzhen stock exchanges and invest in A-share stocks and part of bonds including government bonds, enterprise bonds and convertible bonds. In 2010, three types of banks including overseas central banks, Hong Kong and Macao RMB clearing banks and cross-border RMB trade settlement participating banks were allowed access to the interbank bond market in China. In July 2012, the scope of investment by QFII expanded from the bonds traded on Shanghai and Shenzhen stock exchanges to fixed-income products. Since March 2013, QFII were allowed to invest in the Chinese interbank bond market. On Nov. 11, 2014, the Global X GF China Bond EFT (NYSE Arca: CHNB), the first China bond-focused ETF was launched in the New York Stock Exchange，providing foreign investors with direct access to China's onshore bond market. This means that the internationalization of China's bond market entered a new stage of development.

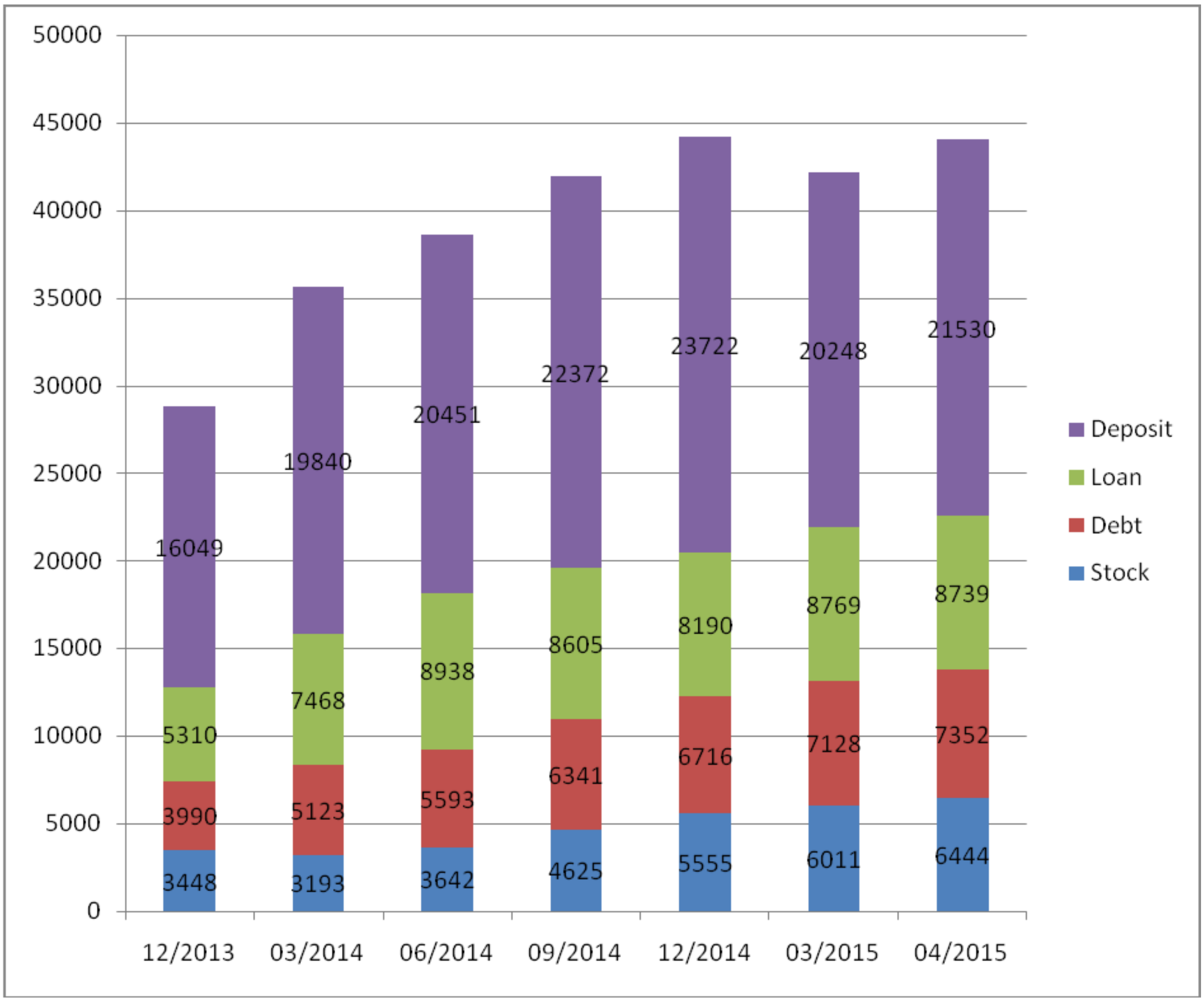
In 2015, new progress was made in the Chinese bond market. Overseas institutional investors (foreign central banks, international financial institutions and sovereign wealth funds) were allowed to invest in the Chinese inter-bank bond market. In market access, the approval system was changed into the registration and recording system, with more categories of bonds permitted to be traded.

The Bank of China issued "One belt, one road" theme bonds in the Asian region and London in June 2015. The People's Bank of China issued central bank notes worth RMB 5 billion in London in Oct.2015. China Construction Bank issued "Marine silk road" bonds in Malaysia in Nov.2015, further enriching the high-grade RMB financial products in offshore markets.

By the end of 2015, there were over 300 foreign investors that had opened accounts with CCDC, holding RMB bonds of RMB 600 billion, accounting for more than 90% of foreign investors' holdings in the Chinese bond market. The China's domestic RMB financial assets held by non-residents is shown in Fig.4.7.

Fig. 4.7 China's domestic RMB financial assets held by non-residents

Unit :RMB 100 million



Source: PBC, CCDC, CSDC, Shanghai Clearing House; Author

4.3 Development Trends in China's Bond Market

Over recent years, the Chinese bond market has been developing at a high rate of speed, but it also faced some problems that couldn't be ignored. For example, the structure of bond types is not perfect and the market regulatory system is not unified. With the continual advance of interest rate marketization, the bond prices fluctuate significantly. But with the further deepening of the Chinese financial market reform, these problems would be gradually solved and they couldn't alter the good momentum of bond market development.

4.3.1 Improvement in Market System and Mechanism

Recently, the Chinese financial regulatory agencies have set forth a series of policies in order to propel continual optimization of the Chinese bond market system and further improve the bond market risk management mechanism. These policies including:

Improving the market-based pricing mechanism of bonds; Strengthening the bond market credit constraints, further standardizing trading behavior of market players to enhance the efficiency of market transactions; Optimizing information disclosure rules and clarifying legal responsibilities of each party concerned; Improving the credit rating methodology and index system, raising the access threshold for credit rating agencies and regulating the rating behaviors of credit rating agencies to enhance the credibility of the domestic credit rating agencies; Establishing the market-oriented guarantee and insurance mechanism to lower and spread investment risks; Strengthening the supervision over accounting firms, auditing firms and lawyer firms and establishing and improving the practitioner’s integrity evaluation system. As above-mentioned policies are put into place, the system and mechanism of China’s bond market will be further improved.

4.3.2 Optimization of the Treasury Yield Curve

Recently, the official of the Chinese Ministry of Finance revealed the Chinese governments would continue to deepen the reform of national debt management system. The issuance program for government bonds of key terms, short-term government bonds and over ten-year long-term government bonds will be further optimized, for instance, the scale and frequency of issuing short-term and long-term government bonds will be increased. The national debt price formation mechanism and the government bond operation mechanism in the secondary market will be further improved. The purpose of these initiatives is to make China’s Treasury yield curve be able to fully reflect the relationship between market supply and demand. The commercial banks will be encouraged to use the fair Treasury yield curve as a benchmark for pricing of deposits and loans, and internal transfer pricing and the bond issuers will be encouraged to use the

Treasury yield curve as a benchmark when they issue floating-rate bonds to further deepen the application of the Treasury yield curve.

4.3.3 Expansion in Asset Securitization

The Asset securitization is a very important channel to raise funds in the Chinese financial market and has become an important driving force for the in-depth development of the Chinese bond market. Since 2014, the Chinese asset securitization has developed very fast, showing a diversified development features. The issuance of various asset-backed securities amounted to RMB 900 billion in the year 2014-2015, six times the total issuance over the past nine years. But on the whole, the scale of the present Chinese asset securitization is so small compared with developed economies. As of the end of 2015, China’s credit asset securitization accounted for only 0.3% of its bank loans. China’s asset securitization accounted for less than 0.5% of its GDP, far lower than 60% of the U.S. asset securitization to its GDP. According to the Chinese National Bureau of Statistics’ relevant report forecast, in the next five years, the amount of China's outstanding asset-backed securities will account for 2% of China’s GDP, the market size will reach RMB 2 trillion, an average annual growth of 40%. Currently, the Chinese government is encouraging more non-bank institutions to invest in the asset securitization products and plans to improve the relevant laws, regulations and rules gradually and promote the Chinese regulatory system and financial market trading rules to be in line with international practices. China's asset securitization development has a good prospect. The issuance of china’s credit asset securitization products in the year 2012-2015 is shown in table 4.4.

Table 4.4 Issuance of china’s credit asset securitization products

Year	Number of items	Total issuance amount （ RMB 100 million）	Types of asset securitizations	Types of issuers
2012	5	192.62	enterprise loans, auto loans	policy banks, state-owned large commercial banks, finance companies, auto finance companies
2013	6	157.73	enterprise loans	policy banks, state-owned large commercial banks, postal savings banks
2014	68	2832.76	enterprise loans, auto loans and leases, enterprise debt, bank debt, personal residential mortgage loans, credit card receivables	policy banks, state-owned large commercial banks, urban commercial banks, rural commercial banks, finance companies, auto finance companies, assets management companies, finance leasing companies
2015	388	4056.33	enterprise loans, auto loans, personal residential mortgage loans, credit card receivables, consumer loans and leased assets	policy banks, state-owned large commercial banks, urban commercial banks, rural commercial banks, auto finance companies, finance leasing companies, assets management companies, foreign-funded banks

Source: CCDC, CSDC, Shanghai Clearing House; Author

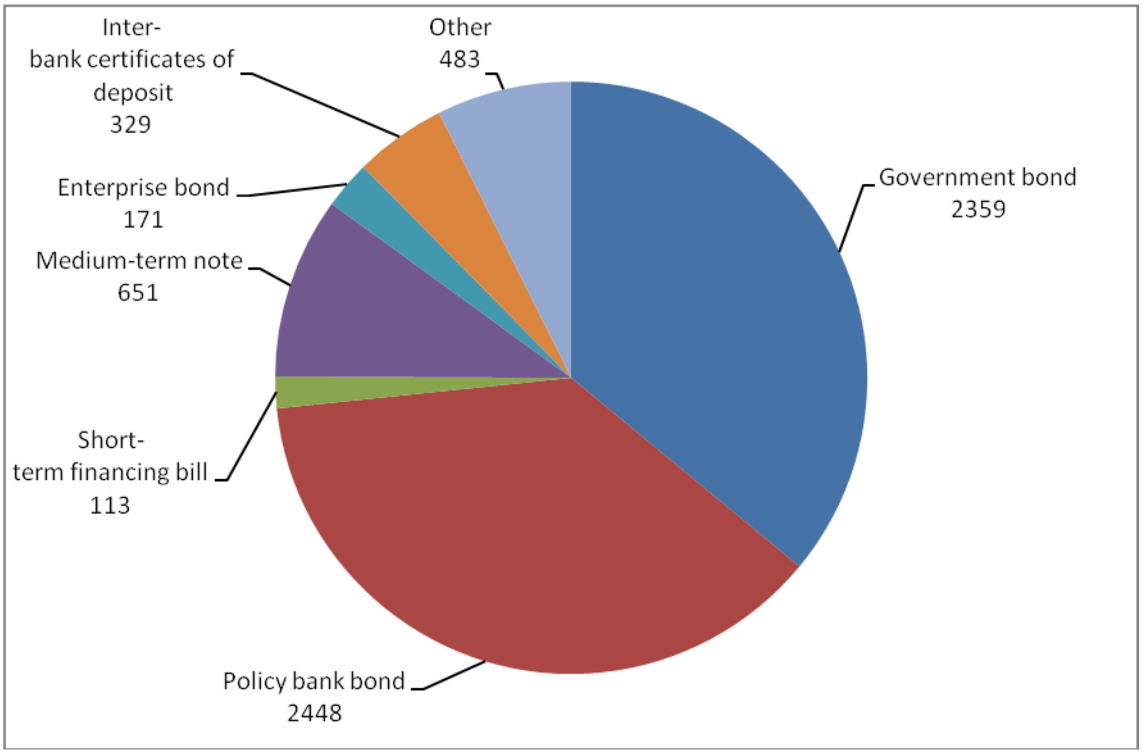
4.3.4 Openness of the Bond Market

China is the world’s second largest economy, but the proportion of foreign investors now holding in RMB bonds issued within the territory of China, is still relatively small. The Chinese bond market has larger space for foreign investors. As predicted in the book *China’s Bond Market (2015)*，whose editor-in-chief is a Chinese famous economist, the types of overseas institutions being allowed access to the Chinese bond market would be expanded from the existing three types (overseas central banks, international finance institutions and sovereign wealth funds) to overseas major institutional investors including commercial banks, insurance companies, securities companies, trust companies, assets management agencies, government investment management companies and fund management companies. It was predicted that the scope of investment in the Chinese bond market by overseas investors would be further expanded. The scale of issuing Renminbi-denominated bonds in the major international finance centers in the future would be expanded. Some experts predict that, with the Chinese Yuan’s inclusion in the SDR basket, China's bond market could become more international. It is predicted that, by 2020, the overseas investors will hold 5-8% of bonds issued within the territory of China.

The type of bonds held by overseas investors at the end of September 2015 is shown in Fig. 4.8.

Fig. 4.8 Type of bonds held by overseas investors as of September 2015

Unit: RMB 100 million



Source: www.chinabond.com.cn, Shanghai Clearing House; Author

5 Conclusion

Based on the basic theories of the bond market, the history and current situations of the Chinese bond market development described in this thesis, the bond market is an important part of China's financial market. In the early years of the founding of the People’s Republic of China, the Chinese bond market was in embryo. In the process of the Chinese economy being transformed from a centrally planned economy to a socialist market economy, the Chinese bond market was formed and developed gradually.

Over 60-odd years, China has made strenuous and fruitful exploration in the development of the bond market, established and gradually improved the bond market system and mechanism. In the market organization, the Chinese bond market experienced the period dominated by OTC trading, the period dominated by trading on Exchanges and the period dominated by the interbank market. From the perspective of bond type structure, the Chinese bond market experienced the period dominated by the government bonds and the period when government bonds, enterprise bonds and corporate bonds coexist. The bond innovation experienced the process from the government-led product innovation to the combination of government guidance and market issuers’ self-innovation.

Especially in recent years, despite the international and domestic economic situations were extremely complicated, the Chinese bond market has been on the path of rapid development. The market size has expanded rapidly, the new type of bonds has been continually introduced, the market participants have been diversified and the regulatory system has been improved. The Chinese bond market has shown outstanding vitality and played an important role in the direct financing and cutting financing expenses for the real economy. The amount of outstanding bonds in the Chinese bond market increased from RMB 0.5 trillion at the end of 1997 to RMB 44.78 trillion at the end of 2015 and the trading volume increased from RMB 1.3 trillion in 1988, when the government bonds began to be traded, to RMB 673.88 trillion at the end of 2015. All these changes are the results of reform, exploration, innovation and development.

Of course, the Chinese bond market is still a developing market and has a long way to go, compared with the bond market in developed countries. There are some problems to be solved as soon as possible. For example, the product structure of China's bond market is still not perfect. Although the issuance of corporate credit bonds has developed relatively rapid in recent years, but its proportion of the bond market is still too low; The investors, bonds and funds cannot flow freely among the exchange market, the inter-bank market and the commercial bank OTC market; The bond market regulatory system is still in a multi-sectorial, decentralized and inefficient regime. But as the reform of the Chinese economic system, especially the reform of the financial system is continually deepened, the above-mentioned problems would be gradually solved. The Chinese bond market’s products will be more abundant, its investors will be more diverse, its regulatory system will be more reasonable, its international level will be significantly improved and its role in optimizing resources allocation will be further enhanced. All in all, the Chinese bond market will have a very broad prospect.

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List of Abbreviations

PBC: People’s Bank of China

CDB: China Development Bank

EIBC: The Export-Import Bank of China

ADBC: Agricultral Development Bank of China

CCDC: China Central Depository & Clearing Co., Ltd

CSDC: China Securities Depository & Clearing Corporation Limited

CSRC: China Securities Regulatory Commission

CBRC: China Banking Regulatory Commission

CIRC: China Insurance Regulatory Commission

BIS: Bank for International Settlements

ABS: Asset-backed security

ABN: Asset-backed note

SDR: Special drawing rights

QFII: Qualified Foreign Institutional Investor

MTN: Medium term note

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Ostrava dated 27/04/2016

徐杨 Yang Xu

Yang Xu

List of Annexes

Annex 1 Major Bonds Holding Structure in China's Bond Market

Unit: RMB 100 million

	Government bond	Policy bank bonds			Corporate bond	MTN	Commercial bank bonds		
		CDB	EIBC	ADBC			Common bond	Subordinated bond	Hybrid capital bond
Sum	94,887.74	67624.07	18,959.60	26,089.80	32,014.42	16275.95	5,991.07	7874.04	231.00
Special Members	16,332.44	100.10	41.80	73.70	61.60	263.38	26.25	0.15	2.20
National Commercial Banks	48,946.38	36,465.62	11,152.49	14,158.90	3,217.33	4,793.90	3,325.06	283.42	94.90
Foreign Banks	1,769.25	604.45	253.80	371.07	10.31	50.21	26.66	0.00	0.00
City Commercial Banks	8,880.29	5,500.94	2,091.16	3,109.14	1,696.64	676.48	944.49	51.29	37.55
Rural Commercial Banks	4,082.05	3,363.84	1,086.76	1,567.90	1,362.99	634.60	542.40	12.00	19.25
Rural Cooperative Banks	98.20	125.10	47.40	75.00	63.12	21.36	47.71	0.00	0.50
Rural Banks	0.40	0.00	0.00	0.00	10.40	13.60	0.00	0.00	0.00
Credit Cooperatives	930.76	2,188.82	583.35	830.10	878.73	733.43	135.85	9.90	12.10
Non-bank Financial Institutions	258.50	81.90	40.20	56.20	120.26	95.90	5.00	22.30	1.00
Securities Companies	431.15	230.00	33.75	149.45	1,533.11	454.42	20.60	1.30	16.15
Insurance Institutions	3,536.43	5,763.01	97.16	149.15	2,737.38	1,208.26	51.95	5,206.68	7.25
Funds	1,790.83	10,495.79	2,421.61	4,163.96	10,935.36	6,494.60	656.03	2,186.70	37.10
Commercial Banks Wealth Management Products	1.20	1,611.08	444.40	661.80	382.81	450.57	192.70	93.00	0.00
Non-financial Institutions	20.90	9.35	0.11	0.00	24.86	8.00	0.00	4.60	3.00
Individuals	2.95	7.17	1.28	0.00	0.05	0.00	0.00	0.00	0.00
Exchanges	5,313.15	0.00	0.00	0.00	8,806.24	0.00	0.00	0.00	0.00
Overseas institution	2,484.48	1,076.56	664.33	723.43	173.07	377.24	17.00	2.70	0.00
Others	8.38	0.34	0.00	0.00	0.16	0.00	0.00	0.00	0.00

Source: www.chinabond.com.cn, at the End of 2015; Author

Annex 2 Issuance of major bonds in China's bond market

Unit: RMB 100 million

	Total	Terms					
		≤1 year	1-3 years	3-5 years	5-7 years	7-10years	≥10 years
Sum	27,749.86	3,226.83	5,261.22	6,544.54	6,249.36	5,839.28	628.63
Book-entry Government Bonds	4,100.00	1,900.00	600.00	600.00	400.00	600.00	0.00
Savings Bonds(Electronic)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Local Government Bonds	9,554.24	0.00	1,697.80	3,024.15	2,945.49	1,886.80	0.00
Central Bank Bonds	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Policy Bank Bonds	9,565.20	1,175.20	1,690.00	1,980.00	1,410.00	2,780.00	530.00
China Development Bank	4,965.20	805.20	860.00	870.00	760.00	1,420.00	250.00
Export-Import Bank of China	1,540.00	0.00	370.00	530.00	70.00	570.00	0.00
Agricultural Development Bank of	3,060.00	370.00	460.00	580.00	580.00	790.00	280.00
Government-backed Institution Bonds	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Commercial Bank Bonds	1,655.00	0.00	882.00	773.00	0.00	0.00	0.00
The common bond	1,655.00	0.00	882.00	773.00	0.00	0.00	0.00
subordinated bond	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hybrid capital bond	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Instruments	376.00	0.00	0.00	0.00	0.00	376.00	0.00
Tier 2 capital	376.00	0.00	0.00	0.00	0.00	376.00	0.00
Non-bank Financial Institution Bonds	163.00	0.00	128.00	0.00	0.00	35.00	0.00
Corporate Bonds	1,917.60	0.00	26.00	158.70	1,487.00	149.90	96.00
State-owned Corporate Bonds	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Local Corporate Bonds	1,886.10	0.00	26.00	158.70	1,461.50	143.90	96.00
Collecting Bonds	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Project Revenue Bonds	31.50	0.00	0.00	0.00	25.50	6.00	0.00
Asset-backed Securities	418.83	151.63	237.42	8.69	6.88	11.58	2.63
Medium Term Notes	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SME Collective Notes	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Source: www.chinabond.com.cn, in January-March 2016; Author